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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,257	10/05/2004	Kevin R. Boyle	GB 020036	8741
65913	7590	03/31/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER PHAN, TRI H	
			ART UNIT 2616	PAPER NUMBER
			NOTIFICATION DATE 03/31/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,257	<b>Applicant(s)</b> BOYLE, KEVIN R.	
	<b>Examiner</b> TRI H. PHAN	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3, 5-10 and 12 is/are rejected.
- 7) ☐ Claim(s) 4, 4/5, 4/6, 4/7, 11 and 11/12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment/Arguments*

1. This Office Action is in response to the Response/Amendment filed on January 8<sup>th</sup>, 2008.  
Claims 1-12 are now pending in the application.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by **Rasinger et al.** (U.S. 5,365,246; hereinafter refer as ‘**Rasinger**’).

- In regard to claim 1, **Rasinger** discloses *a wireless terminal* (‘portable appliance or cordless/mobile telephone’) *for use in the transmitting and receiving frequency bands of a frequency duplex system* (for example see col. 4, lines 49-51; where transmitter and receiver in the radio frequency section, e.g. “*duplex system*”, transmits/receives desired frequencies for portable telephone as disclosed in col. 4, lines 4-18), *comprising transmitting and receiving stages and signal propagating means* (‘radio frequency section’; for example see col. 2, lines 33-36) *coupled to the transmitting and receiving stages, wherein the signal propagating means comprises a single radiating antenna structure* (for example see figs. 1-8) *having sufficient*

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*bandwidth to cover the larger one of the transmitting and receiving frequency bands (for example see col. 4, lines 4-18; wherein the 2 sheet-metal angles 2, 3 as disclosed in figs. 1-7, or the 3 sheet-metal angles 2, 3, 9 as disclosed in fig. 5, is a “single radiating antenna structure” for transmitting/receiving desired frequencies as disclosed in col. 2, lines 13-16; col. 4, lines 13-18), a receiving filter and a transmitting filter coupled by respective feeds to the antenna structure (‘receiving/transmitting filters’; for example see col. 4, lines 49-63).*

- Regarding claims 2-3 and 9-10, **Rasinger** further discloses, wherein the *antenna structure comprises a Planar Inverted-F Antenna ‘PIFA’ including two differential slots (for example see fig. 5; col. 5, lines 7-15; where the antenna comprises two differential slots between the 3 sheet-metal angles 2, 3 and 9, with feeding line 4 and ground, e.g. “PIFA”).*

- In regard to claim 5, **Rasinger** further discloses *the differential slots are of substantially the same size and shape (for example see fig. 5; col. 5, lines 7-15; where slots are symmetrical).*

- Regarding claim 8, **Rasinger** discloses *a module for use in a wireless terminal (‘portable appliance or cordless/mobile telephone’) operable in the transmitting and receiving frequency bands of a frequency duplex system (for example see col. 4, lines 49-51; where transmitter and receiver in the radio frequency section, e.g. “duplex system”, transmits/receives desired frequencies for portable telephone as disclosed in col. 4, lines 4-18), which comprises signal propagating means (‘radio frequency section’; for example see col. 2, lines 33-36) including a single radiating antenna structure (for example see figs. 1-8) having sufficient*

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*bandwidth to cover the larger one of the transmitting and receiving frequency bands (for example see col. 4, lines 4-18; wherein the 2 sheet-metal angles 2, 3 as disclosed in figs. 1-7, or the 3 sheet-metal angles 2, 3, 9 as disclosed in fig. 5, is a “single radiating antenna structure” for transmitting/receiving desired frequencies as disclosed in col. 2, lines 13-16; col. 4, lines 13-18), a receiving filter and a transmitting filter coupled by respective feeds to the antenna structure and having terminals for connection to the RF stages of the wireless terminal* (‘receiving/transmitting filters’; for example see col. 4, lines 49-63).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Rasinger et al.** (U.S.5,365,246) in view of **Isohätälä et al.** (U.S.6,252,554; hereinafter refer as ‘**Isohätälä**’).

- Regarding claim 6, **Rasinger** discloses all the subject matter of the claimed invention as discussed in part 3 above of this office action; but fails to explicitly disclose the limitation of differential slots are “*asymmetric*”. However, such limitation lacks thereof from **Rasinger** reference is well known and disclosed by **Isohätälä**.

In an analogous art, **Isohätälä** discloses an antenna structure of PIFA type, where the first and second gaps, e.g. “*slots*”, are different or “*asymmetric*”, as designed for dual band antenna (for example see fig. 3; col. 3, lines 42-61).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to implement the invention of **Isohätälä**'s antenna structure in place of **Rasinger**'s antenna structure to arrive the claimed invention with the motivation to obtain different resonant frequencies for dual band antenna as disclosed in **Isohätälä**: col. 3, lines 45-61.

6. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rasinger et al.** (U.S.5,365,246) in view of **Ellä, Juha** (U.S.6,278,342; hereinafter refer as ‘**Ellä**’).

- In regard to claims 7 and 12, **Rasinger** discloses all the subject matter of the claimed invention as discussed in parts 3 and 5 above of this office action; but fails to explicitly disclosed about “*bulk acoustic wave or BAW*” filter. However, BAW filter is well known in the art of radio frequency 'RF' filter structures

For example, **Ellä** discloses a balanced filter structure in radio frequency, which utilizes bulk acoustic wave filter (for example see Abstract; fig. 8).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the bulk acoustic wave filter as taught by **Ellä** into **Rasinger**'s filters, with the motivation being to provide a filter with improve frequency characteristics as disclosed in **Ellä**: col. 4, lines 8-12.

***Response to Amendment/Arguments***

7. Applicant's arguments filed on January 8<sup>th</sup>, 2008 with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

8. Claims 4, 4/5, 4/6, 4/7, 11 and 11/12 are objected to as being dependent upon a rejected base claims (claims 1-3 and 8-10), but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Many references in the art disclose the PIFA antenna structure. Most of those references are comprising a housing, transmitting/receiving parts, and antenna structure of type PIFA, such as that found in **Rasinger et al.** (U.S.5,365,246) and **Isohätälä et al.** (U.S.6,252,554). But no prior art reference, considered individually or in combination, fairly show or suggest the claimed invention of base claims and further with limitations as following: “the two differential slots separate the PIFA into a central element and two outer elements, the central and outer elements being interconnected, in that a free end of the central element is connected to a ground plane and in that free ends of the two outer elements are connected respectively to the receiver and transmitter filters.”.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**

Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Tri H. Phan/  
March 28, 2008

/Chi H Pham/

Supervisory Patent Examiner, Art Unit 2616

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